REMARKS

Applicants' Response to the Examiner's Rejections Under 35 U.S.C. §112

The Examiner has rejected claims 13-15 as based on a disclosure which is not enabling because they do not include the "gold microparticles or gold-containing noble metal microparticles" limitation.

Applicants respectfully submit that claims 13-15 are directed to the transparent coating layer, not the transparent conductive layer. As such, the invention of claims 13-15 do not need the "gold microparticles or gold-containing noble metal microparticles" element to function. The coating layer is not intended to be conductive, therefore it does not require elements for conductivity.

The Examiner has also rejected claims 13-20 and 22-24 as being indefinite because neither the claims nor the specification provide any standard for determining what qualifies as amounting to being the "main component" of the liquid coating. Applicants have amended the claims by removing the "main component" phrase.

Applicants' Response to the Examiner's Rejections Under 35 U.S.C. §102

The Examiner has rejected claims 13 and 15 as being anticipated by ***Yamaya et al.*** The ***Yamaya et al.*** reference in its abstract and at its column 2 discloses "a coating composition comprising (A) an organic resin and (B) a silicone compound which can include a mercapto group." Further, ***Yamaya et al.*** specifies that "the amount of the silicone compound (B) ranges from 0.1 to 50 parts by weight per 100 parts by weight of resinous solid components contained in the composition." Applicants have amended claim 13 by replacing the term "a binder" with "an

inorganic binder" at lines 3, 6, and 8 of the claim. Support for this amendment is located on page 15, lines 6-9 and page 24, lines 4-5 of the present specification.

Applicants respectfully submit that the coating liquid for forming a transparent coating layer set forth in amended claim 13 is noticeably differentiated from the coating composition disclosed by ***Yamaya et al.*** To support this position, the Examiner's attention is drawn to two points of difference as enumerated below.

First, the coating liquid for forming a transparent coating layer according to amended claim 13 comprises a solvent, an inorganic binder such as silica sol or the like, and a functional group-containing compound having a mercapto group or the like (for example, γ-mercaptopropyltrimethoxysilane or the like). The coating liquid for forming a transparent coating layer now claimed does not require the organic resin that is necessarily formulated by ***Yamaya et al.***, and hence, this coating liquid is structurally different from the coating composition of the reference.

Second, as to the coating liquid for forming a transparent coating layer according to amended claim 13, the mixture ratio of the inorganic binder and the functional group-containing compound is set within the range from 0.1 to 50 parts by weight functional group-containing compound per 100 parts by weight inorganic binder. In contrast, ***Yamaya et al.*** specifies that the amount of the silicone compound which can contain a mercapto group should range from 0.1 to 50 parts by weight per 100 parts by weight of the resinous solid components; that is, the material upon which the amount of the silicone compound is based is distinct from that recited in amended claim 13.

Accordingly, it is submitted that amended claim 13 is not anticipated by ***Yamaya et al.*** in light of the foregoing reasons.

The Examiner has rejected claim 13 as being anticipated by ***Tanaka et al.*** The ***Tanaka et al.*** reference in its abstract, in fact, discloses "a coating composition containing 100 parts by weight of a resin composition consisting of 30 to 90 parts by weight of (A) a hydroxyl group-containing polyester resin and 10 to 70 parts by weight of (B) a melamine resin, 0.2 to 3.0 parts by weight of (C) a curing catalyst, and 1 to 20 parts by weight of (D) a silicone compound having a mercapto group."

Applicants respectfully submit that the coating liquid for forming a transparent coating layer set forth in amended claim 13 is not anticipated by the coating composition disclosed by ***Tanaka et al.*** To support this position, two points of difference are enumerated below.

First, the coating liquid for forming a transparent coating layer according to amended claim 13 comprises a solvent, an inorganic binder such as silica sol or the like, and a functional group-containing compound having a mercapto group or the like. The coating liquid forming a transparent coating layer now claimed is free of the above-cited resin composition that is essential to ***Tanaka et al.*** and hence, this coating liquid is structurally different from the coating composition of this reference.

Second, as to the coating liquid for forming a transparent coating layer according to amended claim 13, the functional group-containing compound is used in an amount of 0.1 to 50 parts by weight per 100 parts by weight of the inorganic binder. By contrast, ***Tanaka et al.*** discloses that the mercapto group-containing silicone compound should be used in an amount of 1 to 20 parts by weight per 100 parts by weight of the resin composition. In this reference, the material upon which the amount of the silicone compound is based is distinct from that recited in amended claim 13.

Accordingly, it is submitted that amended claim 13 is not anticipated by ***Tanaka et al.*** in light of the foregoing differences.

Applicants' Response to the Examiner's Rejections Under 35 U.S.C. §103

The Examiner has rejected claims 13-20 and 22-24 as being obvious over ***Haluska et al.*** in view of ***Yukinobu et al.*** As noted above, claims 13-15 are not directed to a conductive layer but to a coating layer which does not require "metal microparticles." Hence, these claims are not relevant to and not comparable with the invention which would be allegedly derived from the combination of ***Haluska et al.*** and ***Yukinobu et al.***

Applicants respectfully submit that neither ***Haluska et al.*** nor ***Yukinobu et al.*** recognizes (*i.e.*, teach, motivate or suggest) the problem described on page 8, line 6 from the bottom to page 9, line 5 and page 14, lines 1-8 of the present specification (here, the problem means that the resulting transparent conductive layer causes insufficient film strength and weathering resistance which would result from too small a bonding force between gold-containing noble metal microparticles and a binder matrix). Nor do these references recognize the inventive concept discovered by the Applicants in an effort to solve this problem, which inventive concept means that "a functional group such as a mercapto, sulfide or polysulfide group can form relatively firm bonding to gold" (*see* page 14, lines 9-last line of the present specification). Hence, Applicants respectfully submit that claims 13-20 and 22-24 are not rendered obvious over ***Haluska et al.*** taken in combination with ***Yukinobu et al.*** because one skilled in the art would have no motivation to combine them.

First, ***Haluska et al.*** pertains to "metal containing ceramic coatings" as read from the title.

These coatings fall within a technical filed including magnetic recording media such as "magnetic heads, discs, tapes" and the like, or integreated circuits and the like as described in column 1, lines 62-65 and column 5, lines 56-62.

In contrast to ***Haluska et al.***, the applicants claimed coating liquid for forming a transparent coating layer and coating liquid for forming a transparent conductive layer are suitably useful on faceplates and the like for display devices wherein weight is laid on "transparency" properties. Thus, the present invention and ***Haluska et al.*** belong to their respective different technical fields.

The metallic filler described in ***Haluska et al.*** is then considered, various types of which are illustrated in the examples. Specifically, alumina with an average particle size of 6 μm (that is, 6000 nm) is shown in Examples 3 and 4, iron oxide with an average particle size of 0.27 μm (that is, 270 nm) in Example 7, zinc powder with an average particle size of 5 μm (that is, 5000 nm) in Example 11, silver powder with an average particle size of 1 μm (that is, 1000 nm) in Example 12, nickel powder with an average particle size of 5 μm (that is, 5000 nm) in Example 13, cobalt powder with an average particle size of 3 μm (that is, 3000 nm) in Example 14, and aluminum powder with an average particle size of 5 μm (that is, 5000 nm) in Example 15.

More specifically, the metallic fillers taught by ***Haluska et al.*** are dissimilar in the average particle sizes to the requirement of "an average particle diameter of 1 to 100 nm" described in paragraph [0027] of ***Yukinobu et al.***, which requirement was specified in order to prevent visible light transmission from being reduced. Thus, ***Haluska et al.*** describes an invention of a nature not requiring "transparency" properties.

The structural difference between the invention of ***Haluska et al.*** and the present invention

is due to the fact that both inventions belong to their respective different technical fields as stated earlier.

Haluska et al. further teaches "mercaptopropyltrimethoxysilane" or the like as a material that modifies the surface of the metallic filler to ensure higher adhesion.

However, there is no teaching or suggestion in ***Haluska et al.*** that "mercaptopropyltrimethoxysilane" is capable of yielding marked effects when the metallic filler is "gold", that is, that "gold microparticles or gold-containing noble metal microparticles" can exert significant effects when such metal microparticles are used together with "mercaptopropyltrimethoxysilane." ***Haluska et al.*** lists, merely separately, "gold" as one metallic filler and "mercaptopropyltrimethoxysilane" as one additive.

Namely, in regard to amended claim 16 directed to a coating liquid for forming a transparent conductive layer, the technical aspect of this claim, i.e., the use of "gold microparticles or gold-containing noble metal microparticles" in combination with "a functional group-containing compound having a functional group selected from mercapto, sulfide and polysulfide groups," was completed only after the recognition of the above stated problem and the discovery of the above stated inventive concept for solution of the problem.

In the first place, ***Haluska et al.*** and ***Yukinobu et al.*** fail to recognize the above-stated problem to be solved. In the second place, the references do not teach nor suggest the inventive concept discovered by the applicants in solving the problem, namely that "a functional group such as a mercapto, sulfide or polysulfide group can form relatively firm bonding to gold." In the third place, ***Yukinobu et al.*** belongs to a technical field common to that of the present intention but

Haluska et al. belongs to a different one; therefore, there is no likelihood that one skilled in the art would have been motivated to combine these references. For the reasons indicated here, it is submitted that claims 16-20 and 22-24 are not obvious over ***Haluska et al.*** and ***Yukinobu et al.***

Claims 13-14, 16, 19, and 22 have been amended in order to more particularly point out, and distinctly claim the subject matter to which the Applicants regard as their invention. It is believed that this Amendment is fully responsive to the Office Action dated **November 21, 2002**.

In view of the aforementioned amendments and accompanying remarks, claims, as amended, are in condition for allowance, which action, at an early date, is requested.

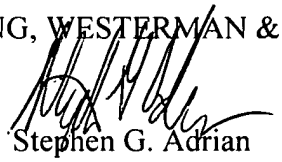
If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "**Version with markings to show changes made**."

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, WESTERMAN & HATTORI, LLP



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Enclosures: Version with markings to show changes made

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VERSION WITH MARKINGS TO SHOW CHANGES MADE
U.S. PATENT APPLICATION SERIAL NUMBER 09/645,471

IN THE CLAIMS:

Claims 13, 14, 16, 19 and 22 have been amended as follows:

13. (Amended) A coating liquid for forming a transparent coating layer [used in the method of producing a transparent conductive layered structure according to Claim 7,] comprising, [as its main components,] a solvent, [a] an inorganic binder, and a functional group-containing compound having at least one functional group selected from mercapto groups (-SH), sulfide groups (-S-), and polysulfide groups ($-S_x-$, $X \geq 2$),

wherein the mixture ratio of the inorganic binder and the functional group-containing compound is 0.1 to 50 parts by weight functional group-containing compound per 100 parts by weight inorganic binder.

14. (Amended) A coating liquid for forming a transparent coating layer according to Claim 13, wherein the binder is an inorganic binder [whose main component is] containing silica sol.

16. (Amended) A coating liquid for forming a transparent conductive layer [used in the method for producing a transparent conductive layered structure according to Claim 8,] comprising, [as its main component,] a solvent, gold microparticles or gold-containing noble metal microparticles containing 5 wt% or more of gold with a mean particle diameter of 1 to 100 nm, dispersed in the solvent, and a functional group-containing compound having at least one

functional group selected from mercapto groups (-SH), sulfide groups (-S-), and polysulfide groups (-S, X $\geq$ 2).

19. (Amended) A coating liquid for forming a transparent conductive layer according to Claims 16 [to 18] or 17, containing an inorganic binder [whose main component] containing silica sol.

22. (Amended) A coating liquid for forming a transparent conductive layer according to claim 18, containing an inorganic binder [whose main component] containing silica sol.